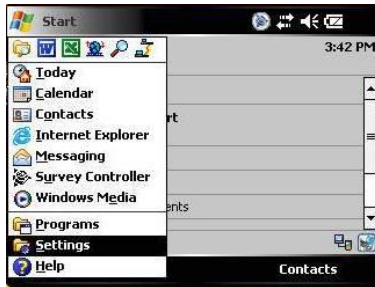# *VRS Setup for a Trimble TSC2 Data Collector with Survey Controller*

For this demonstration, I will be setting up a Verizon phone on the MnDOT VRS network with a TSC2 and an R8 receiver. A list of dial strings, modem commands, etc. will be attached at the end of this demonstration. Please refer to it for information to be entered in the setup.

*In the main Windows screen, pick on the Start menu and then pick settings.*

In the settings window, pick on the connections tab on the bottom of the screen. Then double click on Bluetooth to pair your data collector with your VRS cell phone.
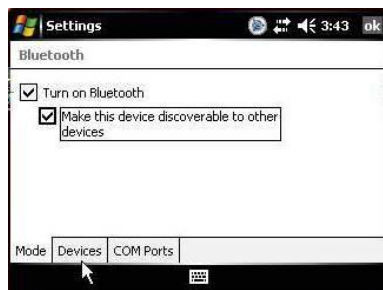
You will want to check the box next to "Turn on Bluetooth" and also check the box next to "Make this device discoverable to other devices". Sometimes you have to scan with your cell phone to find the data collector if it won't find your cell phone

Pick on the devices tab on the bottom of the screen. To pair your cell phone, pick on "New Partnership" and your data collector will search for the phone. Once it finds it, you phone may ask for a pass key. Type in 1 2 3 4 and also type it in again when your data collector asks for the pass key. Once that is done, your data collector and your cell phone should be successfully paired. You will now be able to see it on your devices list.
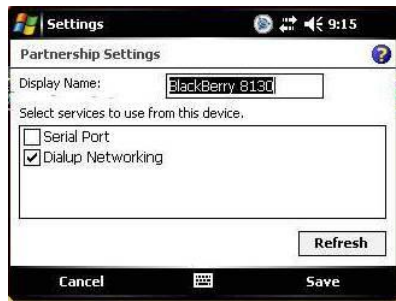
Once your device is found, select it on the list and pick next. At this screen, you will want to make sure that you have the Dialup Networking box checked. Then pick "Save".
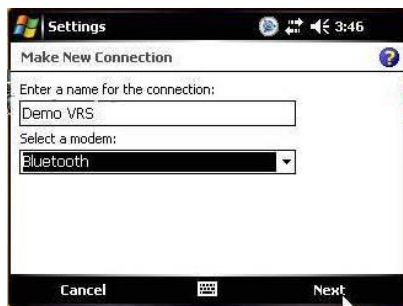

Once you are back at this screen, pick "OK" in the upper right corner.

When you are back in this screen, pick on the "Connections" icon to set up your ISP connection.
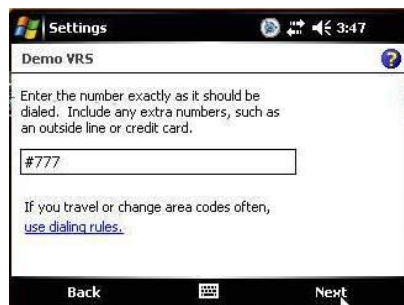

*Under the My ISP heading, pick on "Add new modem connection"*

In this screen, first type in a name for your new connection. Then, under the select a modem heading, pick "Bluetooth" in the pull down. Then pick "Next" on the bottom of the screen.

Once you are in this screen, select your phone that your partnered up with the data collector and then pick "Next" on the bottom of the screen.

In this screen, type in the dial string that your cell phone provider requires to connect to the web. Then pick "Next" on the bottom of the screen.
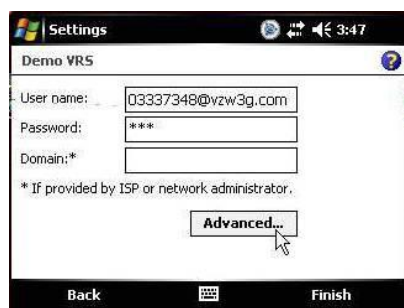
Enter in your username and password that your cell phone provider requires to connect to the web. For AT&T/Cingular, T-Mobile, Verizon, and Unicel (only if you use the Razr phone), pick on the "Advanced" button. Other users pick "Finish" on the bottom of the screen. (Some cell phone providers do not require a username and password like T-Mobile, Nextel and Sprint. Check the settings at the end of this document for your specific cell phone provider.)
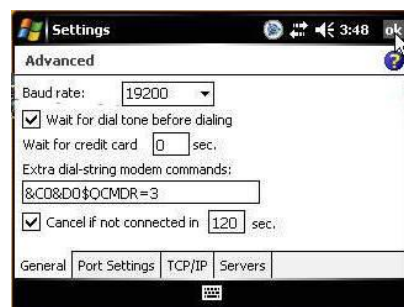

If your provider requires a special modem command, in the advanced settings box, type in the special modem command that is required by your cell phone provider. For Unicel Razr phone users, change the baud rate to 115200. Pick "ok" in the upper right hand corner.

When you are back in this screen, pick "Finish" on the bottom of the screen. (The domain box is to be left blank).

*After you pick finish, you will be brought back to this screen. Again pick "Manage existing connections".*
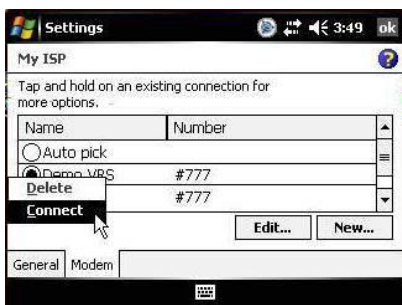
In this screen, you should see the connection you just made, along with the dial string. Pick and hold down on the connection and then pick "connect" on the pull down. This is a test to see if your TSC2 will successfully connect to the web via your phone. It should say that it is dialing, then the box will disappear. To check if it has connected, pick on the two arrows on the top of the screen next to the speaker icon. You will get a box that has a counter on it and a button that says disconnect. That means you are connected, so you can go ahead and pick "Disconnect".


Once you have successfully connected the controller to the web, open up the Survey Controller program. On the main screen, pick "Configuration" and then "Dial Profiles".
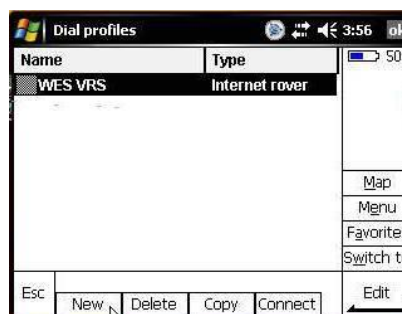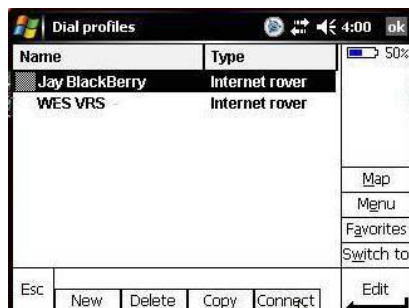

Pick on "New" at the bottom of the screen.
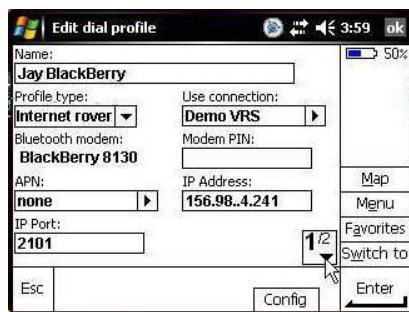
In this screen, you will need to give your profile a name. Under type, select "Internet Rover". Under use connection, select your connection that you just made. Your phone should show up under the Bluetooth modem. The modem pin should be blank. For AT&T/Cingular, T-Mobile, and Unicel users, you will need to enter in an APN. Other users need to enter in "none" in that box. For the MnDOT CORS network, the IP Address is 156.98.4.241 and the IP Port is 2101 unless otherwise directed by MnDOT. Pick $1^{/2}$ for the next page.
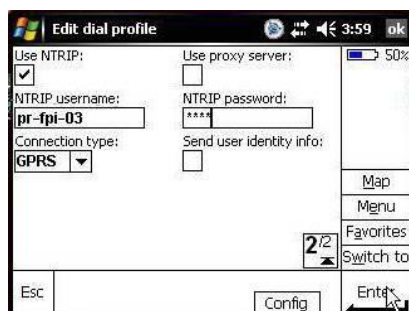
In this page, you want to check the Use NTRIP box. Type in your MnDOT username and password. If you do not have one, you must contact MnDOT for this. You cannot proceed without this. Your connection type should be GPRS. Once you have that all in, pick "Enter"

Now you will see your Dial Profile show up in this screen. Highlight your new profile and then pick "Connect" at the bottom of the screen. This will let you see if you are able to dial into your VRS network.
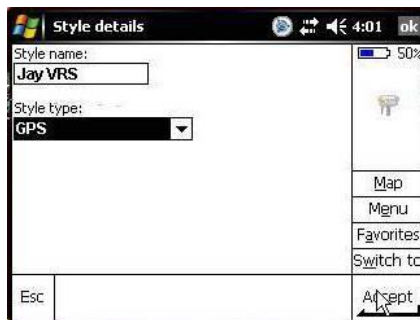

*You should see this on your screen.*

Once it is connected, you can disconnect and then escape back out into the main Survey Controller screen. Once there, pick on "Configuration" and then "Survey Styles".


In the Survey Styles directory, pick the "New" soft key on the bottom of the screen. Give your VRS survey style a name. Under Style type, pick "GPS" from the pull down. Then pick "Accept" on the bottom of the screen.
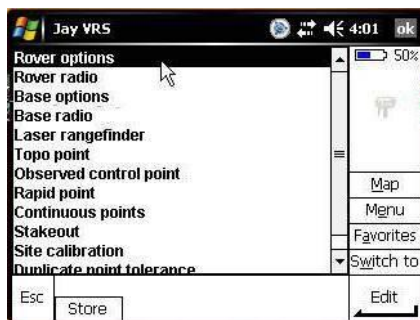

In this screen, pick "Rover Options"
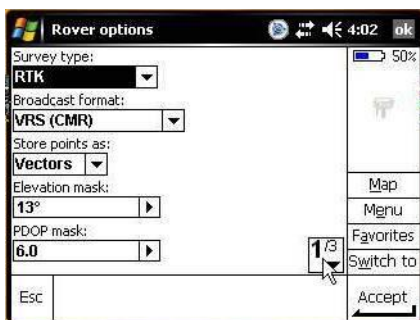
In the Rover Options screen, your survey type should be "RTK". Your Broadcast Format should be "VRS (CMR)", unless otherwise directed from MnDOT. Your Store points as should be "Vectors". Your elevation mask and PDOP mask can be whatever you choose. We suggest using 13 degrees and 6.0. Pick $1^{/3}$ for the next page.
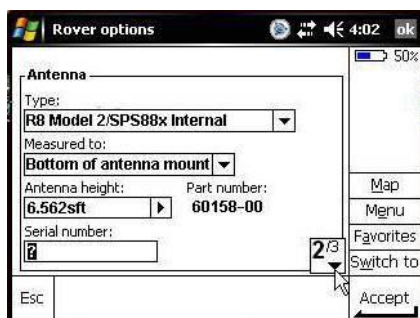
In this screen, you will need to pick your GPS antenna type. For this application, I am using a Trimble R8 Model 2 rover. You can chose where you want your antenna height measured to and you can enter in the height. We are measuring to the bottom of the mount and are using the standard two meter pole. Pick $2^{/3}$ for the next page.
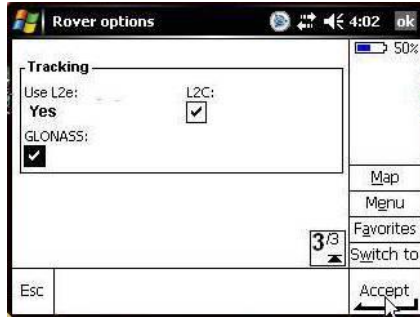
*In this screen, you will want to pick what types of satellites you want to track. Again, being that this is an R8 setup, I am choosing all three. I suggest that you use whatever you have in your RTK survey style so you know that it is right. If you are in and out of the GLONASS network, we suggest that you create two different Survey Styles. Make one for when you are in the GLONASS network and one for when you are outside the network. At the bottom of the screen, pick "Accept".*
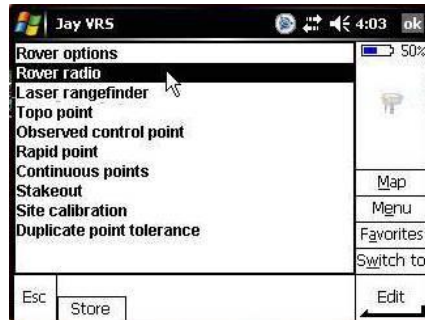
Once you are back on the Survey Style setup screen, pick "Rover Radio"
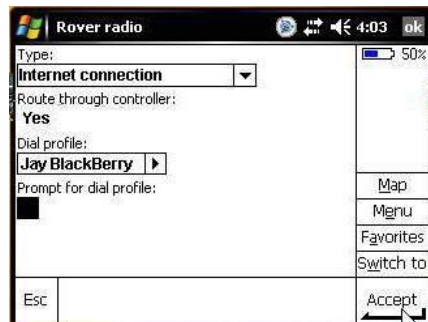
Under Type you want to select "Internet Connection".
It should say "yes" under Route through controller.
Under dial profile, you should be able to select the profile that you had just made. Then pick "Accept" on the bottom of the screen.
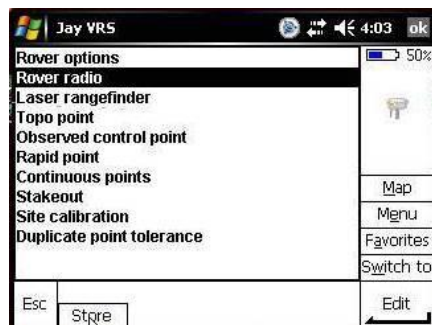
You will be brought back out to the survey style options screen. Pick "Store" at the bottom of the screen.
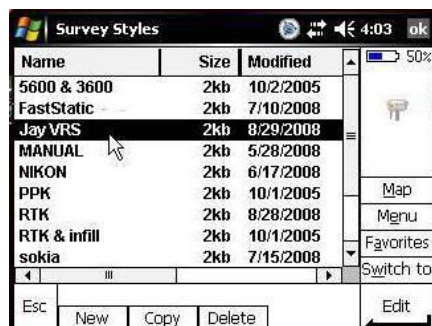
You should now be able to see your new Survey Style in the list. Once it is there, you can escape back out to the main Survey Controller screen.
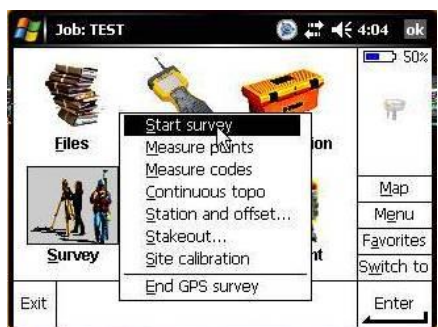
Once back to the main Survey Controller screen, pick on "Survey" and then your VRS survey style, then "Start Survey". You should now be set up and ready to survey on your local VRS network. If you have additional questions or comments, feel free to call Jay Haskamp on the Tech. Support Hotline at (888) 797-4774 or email him at *jayh@frontierprecision.com*

Common Cell Phone Provider Settings:

AT&T/Cingular: **APN=** *isp.cingular*

Dial String= **99#   (Most Common)*

*99***1#

Modem Command= *+cgdcont=1,"IP","wap.cingular"   (Most Common)*

+ cgdcont=1,"IP","isp.cingular"

+cgdcont=1,"IP","proxy"

Username= *WAP@cingulargprs.com   (Most Common)*

ISP@cingulargprs.com

WAP@cingular.com

Password= *CINGULAR1*

Nextel: **APN=** *none*

Dial String= *s=2*

There are no modem commands, usernames, or passwords. Leave blank.

Sprint: **APN=** *none*

Dial String= *#777*

There are no modem commands, usernames, or passwords. Leave blank.

T-Mobile: *APN=* *wap.voicestream.com   (Most Common)*
                        internet3.voicestream.com

Dial String= **99#   (Most Common)*
                        *99***1#
                        *99***2#
                        *99***3#

Modem Command= *+cgdcont=1,"IP","wap.voicestream.com"*
                        (Most Common)
                        +cgdcont=1,"IP","internet3.voicestream.com"

There are no usernames or passwords. Leave blank.

Verizon: *APN=* *none*

Dial String= *#777*

Modem Command= *&C0&D0$QCMDR=3 ("0" denotes a zero)*

Username= *(Your 10 digit cell phone number)@vzw3g.com*

Password= *vzw*

Alltel: *APN=* *none*

Dial String= *#777*

Username= *(Your 10 digit cell phone number)@alltel.net*

Password= *alltel*

There is no special modem command. Leave Blank.

Unicel: *APN=* *apn.unicel.com*

Dial String= *#777*

Username= *rcccdma@unicel.com*

Password= *rcccdma*

**Unicel Razr phone only- Change the baud rate to 115200 and use the
   Special modem command: &C0&D0$QCMDR=3**